Amendments to Specification

Please replace the paragraph beginning on page 5, line 12, with the following rewritten paragraph:

Figure 3 illustrates an actual image at top left and three simulated images at bottom left of the transverse process with corresponding statistical images at right, the images developed in accordance with the present invention, where the images show only the small, approximately 6mm axially and 15mm laterally, portion of the entire image that represent scattering from the transverse process, the statistical images show the variation of the mean, standard deviation and SNR_0 across the image, the simulated images were generated for three different realizations of the microstructure, while the statistical images were computed directly from the model to characterize all possible images;

Please replace the paragraph beginning on page 5, line 15, with the following rewritten paragraph:

Figure 4 illustrates an actual image at the top and three simulated images below of the lamina and articular processes, the images developed in accordance with the present invention, where, from right to left, anatomical structure are the facet joint on the left (Rayleigh scattering with wide axial extent), lamina in the center (non-Rayleigh scattering with relatively high amplitude), and inferior articular process on the right (mix of Rayleigh scattering on the sides and non-Rayleigh scattering at the peak);

Please add the following paragraphs, beginning on page 5, line 24:

Figure 7 illustrates a flow diagram showing structure of a program capable of being stored on computer readable medium and directed to forming a physically-based, probabilistic model for ultrasonic images, in accordance with one embodiment of the present invention;

Figure 8 illustrates a flow diagram showing structure of a program capable of being stored on computer readable medium and directed to forming an imaging model, in accordance with one embodiment of the present invention;

Figure 9 illustrates a flow diagram showing structure of a program capable of being stored on computer readable medium and directed to creating image pixel based statistics, in accordance with one embodiment of the present invention; and

Figure 10 illustrates a flow diagram showing structure of a program capable of being stored on computer readable medium and directed to forming a physically-based, probabilistic model for ultrasonic images, in accordance with one embodiment of the present invention.